holder and at least one tool, attached or attachable to the tool holder, which allows a workpiece to be processed by running a machine program, and which has at least one control unit comprising at least one sensor using the following steps:

recording at least one, in particular time-dependent, piece of body data of the workpiece, the tool, the tool holder, and/or at least one drive axle;

recording at least one piece of time-dependent room data of the workpiece, the tool, the tool holder, and/or at least one drive axle;

recording at least one piece of time-dependent operating data, and/or

recording a least one electrical current of the tool holder and/or of at least one drive axle;

recording the time-dependent real total energy intake of one or more steps in the machine program using a least one of the control unit's sensors, and calculating the time-dependent, virtual total energy intake of one or more steps using a virtual simulation of the machine program with the control unit based on the body data, room data, and operating data recorded; and

recording or calculating radial forces acting on the tool holder, at least as the difference between time-dependent real total energy intake and time-dependent virtual total energy intake with the control unit.

2. The process according to claim **1**, wherein the time-dependent virtual energy uptake comprises at least the sum of the calculated, time-dependent, virtual energy intake of the workpiece holder when idling, in particular when not processing the workpiece, across one or several steps of the machine program cycle, and the time-dependent, virtual energy intake of processing a workpiece across one or several steps of the machine program cycle.

3. The process according to claim **2**, wherein the time-dependent, virtual energy intake during idling across one or more steps of the machine program cycle can be calculated using the required mechanical energy of at least one idling drive axle, or from at least one machine efficiency level for mechanical energy, and/or that the time-dependent virtual energy intake during idling can be calculated across one or more steps of the machine program cycle using the virtual heat dissipation corresponding to the mechanical energy of at least one idling drive axle.

4. The process according to claim **2**, wherein the time-dependent, virtual energy intake of workpiece processing comprises time-dependent, virtual material ablation of the workpiece across one or more steps of the machine program cycle multiplied by the virtual energy intake required for this per volume of workpiece ablated.

5. The process according to claim **4**, wherein virtual material ablation and the virtual energy intake required for this per volume of the workpiece ablated is saved and adjusted in a storage medium of the control unit, and that such data is able to be retrieved for calculating virtual total energy intake.

6. The process according to claim **4**, wherein the time-dependent, virtual energy intake of workpiece processing additionally comprises multiplication by a material variable or material constant of the workpiece.

7. The process according to claim **1**, wherein the calculation by the control unit of the radial forces acting on the tool holder is calculated as at least the difference between time-dependent, real total energy intake and time-dependent, virtual total energy intake and additionally includes calibration using a machine-specific calibration factor or a calibration function.

8. The process according to claim **1**, wherein the recording of at least the body data, room data, and operating data by a sensor in the control unit includes manual archiving in the control unit, in particular in the control unit's storage medium, and/or automatic archiving from the machine program.

9. The process according to claim **1**, wherein the approximation of the geometry of the body data of the tool and/or tool holder recorded using virtual auxiliary geometry from a number of N auxiliary elements and/or approximation of the geometry of the workpiece using a virtual scatter plot in a Cartesian coordinate system, the individual points of which are spaced at regular intervals from one another which form, in particular, a regular or irregular matrix.

10. The process according to claim **9**, wherein the time interval between recording body data, room data, and operating data is equal to or smaller than the distance between two points of the geometry of the workpiece approximated as a virtual scatter plot divided by the feed speed of the tool and/or tool holder, and/or that the time interval will comprise the timespan of one step of the virtual simulation of the machine program.

11. The process according to claim **9**, wherein the time-dependent, virtual material ablation of the workpiece, in the virtual simulation, comprises all such points of the workpiece's virtual scatter plot which overlap during the timespan with the auxiliary elements which make up the virtual auxiliary geometry of the tool, and that the virtual geometry of the workpiece is adjusted by removing those points of the virtual scatter plot which overlap with the auxiliary elements of the tool.

12. A virtual sensor for determining the condition of a tool holder, or a tool machine which can be operated using a process according to claim **1**, with at least one tool holder, with at least one tool attached or attachable to the tool holder, by means of which a workpiece can be processed by running a machine program, and with at least one control unit comprising a least one sensor which can be used to measure time-dependent, total real energy intake and to calculate time-dependent, total virtual energy intake, wherein the radial forces acting on the tool holder can be calculated using the control unit at least as the difference between total real energy intake and time-dependent, total virtual energy intake.

13. A tool machine which comprises at least one virtual sensor according to claim **12**.

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